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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,487	04/12/2004	Rie Kojima	10873.763USD1	4947
52835	7590	03/31/2006	EXAMINER	
HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402			ANGEBRANNDT, MARTIN J	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/823,487	KOJIMA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Martin J. Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 2/17/06 & 1/24/06.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 27-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 27-40 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. 09/903285.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

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1. The response of the applicant has been read and given careful consideration. Responses to the arguments are presented after the first rejection to which they are directed. Rejections appearing in the previous office action, but not repeated below are withdrawn based upon the amendments to the claims.

The priority documents are in the parent application. The applicant has submitted certified translations of these documents and the claims are accorded an effective filing date of April 26, 2001 as the ternary phase diagram does not appear in the Japanese application filed July 13, 2000.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 27,30-32,35 and 38 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Yamada et al. WO 00/54982.

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Examples 11 and 12 use  $[(\text{Ge}+\text{Sn})_4\text{Sb}_2\text{Te}_7]_{(100-y)}\text{Cr}_y$  or  $[(\text{Ge}+\text{Sn})_4\text{Sb}_2\text{Te}_7]_{(100-y)}\text{Ag}_y$  coated to thicknesses of 9 nm. Pages 34-35. Where y may be 0 and x is the percentage of Sn in the entire composition. The composition appears to be  $(\text{Ge}+\text{Sn})_{30.7}\text{Sb}_{15.4}\text{Te}_{53.8}$  which appears to be inside to ab tie line.

The translation of JP 2000-212338 does not support the full scope of the coverage sought. Specifically, only the later document JP 2001-128904 include the ternary phase diagram relied upon by the applicant.

5. Claims 27,29-32,35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakakuki et al. EP 1096485.

Example 6 uses GeSnSbTe coated to thicknesses of 10 nm and evaluates the recording layer using a laser wavelengths of 660 nm (table 1). The recording layer thickness is optimally 7-17 nm. [0040].  $\text{Ge}_{22.2}\text{Sn}_{7.4}\text{Sb}_{17.1}\text{Te}_{53.3}$  which is within the triangle scribed by abc. The use of other compositions within the scope of formula  $[(\text{Ge}_{1-k}\text{Sn}_k)_{0.5}\text{Te}_{0.5}]_x(\text{Sb}_{0.4}\text{Te}_{0.6})_{1-x}]_{1-y}\text{Sb}_y\text{A}_z$  is disclosed.

It would have been obvious to modify the cited examples by using other optimal thicknesses such as 7-9 nm with a reasonable expectation of forming a useful optical recording medium.

The rejection stands for the reasons above.

6. Claims 27-40 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Kojima et al Presentation We-C-06 at ISOM2000 (09/2000) as cited in Akiyama et al. "Rewritable Dual layer phase change optical disk using blue-violet laser", Jap. J. Appl. Phys. Vol. 40(3B) pp. 1598-1603 (03/2001) and [www.isom.jp/about/atopr.htm](http://www.isom.jp/about/atopr.htm).

[www.isom.jp/about/atopr.htm](http://www.isom.jp/about/atopr.htm) on the fourth page of five discusses the results of the conference being published in special issues of the Japanese Journal of Applied Physics.

The examiner adopts the position that the paper cited corresponds to the presentation We-C-06 at ISOM2000 as this is a special issue of Jap. J. Appl. Phys. Published shortly after the conference. The applicant may wish to provide materials used in the presentation We-C-06 and/or the abstract of the presentation to clarify the record.

The examiner is attempting to get a printed document corresponding to the presentation. This may be either Tech. Dig ISOM2000, We-C-06 or may be Jap. J. Appl. Phys. Pt 1. Vol. 40(10) pp. 5930-5937. These will be forwarded to the applicant when they are available to the examiner.

7. Claims 27-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. "Rewritable Dual layer phase change optical disk using blue-violet laser", Jap. J. Appl. Phys. Vol. 40(3B) pp. 1598-1603 (03/2001), in view of Kojima et al Presentation We-C-06 at ISOM2000 (09/2000) or Nakakuki et al. EP 1096485.

See figure 1 and accompanying text, where the recording layer is 6 nm thick and a 405 nm laser is used. SnGeSbTe recording layer is used in the first recording layer.

It would have been obvious to one skilled in the art to modify example of figure 1 of Akiyama et al. "Rewritable Dual layer phase change optical disk using blue-violet laser", Jap. J. Appl. Phys. Vol. 40(3B) pp. 1598-1603 (03/2001) by using SnGeTeSb compositions such as those disclosed by Nakakuki et al. EP 1096485 in example 6 or Kojima et al Presentation We-C-06 at ISOM2000 (09/2000) with a reasonable expectation of forming a useful recording medium

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8. Claims 27-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. '788, in view of Nakakuki et al. EP 1096485 and Coombs et al. "Laser induced crystallization phenomena in GeTe based alloys II., Composition dependence of nucleation and growth", J. Appl. Phys. 78(8) pp. 4918-4828 (10/1995).

Yasuda et al. '788 in example 1 a multilayered optical recording medium with two recording media adhered face to face. The GeTeSb recording layer thicknesses are 14 nm and the media are used with a 400 nm laser. (27/60-28/54). Recording layer thicknesses of as little as 5 nm can be used. (18/33-35). The use of GeTeSb based recording materials and the use of Sn in the recording layer is disclosed. (12/25-50)

Coombs et al. "Laser induced crystallization phenomena in GeTe based alloys II., Composition dependence of nucleation and growth", J. Appl. Phys. 78(8) pp. 4918-4828 (10/1995) teaches that the replacement of a portion of the Ge with Sn resulting in improved nucleation time and crystal growth speed. (page 4922/right column).

It would have been obvious to one skilled in the art to modify example 1 of Yasuda et al. '788 by using a thinner recording layer such as 5-9 nm and a composition such as the SnGeSbTe recording layer disclosed by Nakakuki et al. EP 1096485 in example 6 with a reasonable expectation of forming a recording medium useful with 400 nm lasers due to the presence of GeSb and Te in both the recording layers disclosed by Yasuda et al. '788 and Nakakuki et al. EP 1096485 and the evidence that GeSbTe based recording layers are useful with 400 nm lasers by Yasuda et al. '788 with a reasonable expectation of improving the nucleation and crystal growth speed based upon the teachings of Coombs et al. "Laser induced crystallization phenomena in

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GeTe based alloys II,. Composition dependence of nucleation and growth", J. Appl. Phys. 78(8) pp. 4918-4828 (10/1995).

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 27-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent No. 6,751,184. Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claim 9, the useful wavelengths appear in claim 5. Claims to the medium, the method of manufacture and the methods of use are present in the patent.

Contrary to the argued position, the examiner did consider the preliminary amendment. The claims are much narrower now and so a number of the prior rejections have been obviated. Those remaining stand noting the formulae and thicknesses recited in the claims of these documents.

11. Claim 27,31,35 and 38 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,689,445. Although the conflicting claims are not identical, they are not patentably distinct from each other

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because the thickness of the recording layer and the composition appear in claims 1 and 9.

Claims to the medium are present in the patent. The use claims are nominal methods of use for optical recording media.

12. Claims 27,31,32,35 and 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/7343711 (US 2004/0126533). Although the conflicting claims are not identical, they are not patentably distinct from each other because the thickness of the recording layer and the composition appear in claims 1 and 4. Claims to the medium and the method of manufacture are present in the patent. The use claims are nominal methods of use for optical recording media.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

03/24/2006